

We claim:

1. An isolated and purified polypeptide wherein the polypeptide (a) is a variant type 2 methionine aminopeptidase ("MetAP2"), (b) has dominant negative  
5 MetAP2 activity and (c) contains a translation domain.
2. The isolated and purified polypeptide of claim 1 comprising a sequence which is at least 46% identical to SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 or SEQ ID NO:16, or a fragment thereof.
3. The isolated and purified polypeptide of claim 2 comprising SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 or SEQ ID NO:16, or a fragment thereof.
4. The isolated and purified polypeptide of claim 3 which consists essentially of SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 or SEQ ID NO:16, or a fragment thereof.
5. The isolated and purified polypeptide of claim 4 which consists essentially of SEQ ID NO:12, wherein the histidine at position number 231 is replaced with an alanine.
6. An isolated and purified polynucleotide comprising a nucleotide sequence encoding the polypeptide of claim 1.
7. The isolated and purified polynucleotide of claim 6 wherein the isolated and purified polynucleotide encodes a peptide that comprises SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 or SEQ ID NO:16, or a fragment thereof.
8. The isolated and purified polynucleotide of claim 7 wherein the isolated and purified polynucleotide encodes a peptide that consists essentially of SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 or SEQ ID NO:16, or a fragment thereof.
9. The isolated and purified polynucleotide of claim 8 wherein the isolated and purified polynucleotide comprises a sequence selected from the list consisting of SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11 and SEQ ID NO:18.

10. The isolated and purified polynucleotide of claim 9 wherein the purified polynucleotide comprises SEQ ID NO:9.

11. A vector containing an isolated and purified polynucleotide which encodes the polypeptide of claim 1.

12. The vector of claim 11 wherein the polypeptide is SEQ ID NO:6.

13. The vector of claim 12 wherein the polynucleotide consists of SEQ ID NO:9.

14. The vector of claim 13 wherein the polynucleotide is operably linked to a promoter which is selected from the list consisting of GAL1, CMV, GPD, an endothelial cell-specific promoter and an immune cell-specific promoter.

15. The vector of claim 14 wherein the vector is an adenovirus and the promoter is CMV.

16. A method of treating a cell comprising contacting the cell with a composition comprising an isolated and purified polypeptide, wherein the polypeptide is a variant MetAP2 that has dominant negative MetAP2 activity and contains a translation domain.

17. The method of claim 16 wherein the cell is in a subject.

18. The method of claim 17 wherein the subject suffers from a disease mediated by a fungal infection, cell proliferation, angiogenesis, decreased function of p53 or immune system activity.

19. The method of claim 18 wherein the subject is a human suffering from a disease mediated by angiogenesis.

20. A method of treating a cell comprising contacting the cell with a composition comprising an isolated and purified polynucleotide, wherein the polynucleotide encodes a variant MetAP2 that has dominant negative methionine MetAP2 activity and contains a translation domain.

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~~30.~~ A method of identifying effectors of MetAP2 activity comprising contacting a yeast cell with a polynucleotide and determining that the polynucleotide encodes an effector of MetAP2 activity, wherein

(a) the yeast cell comprises a functional gene that encodes a MetAP2 and a polynucleotide that encodes a dominant negative MetAP2,

(b) the yeast cell does not contain an operable naturally occurring chromosomal copy of a gene encoding a MetAP1, and

(c) the determining step comprises comparing the growth rate of yeast cells that contains a polynucleotide that encodes an effector of MetAP2 activity with a yeast cell that does not contain a polynucleotide that encodes an effector of MetAP2 activity, wherein the growth rate of a yeast cell that contains a polynucleotide that encodes an effector of MetAP2 activity is greater than the growth rate of a yeast cell that does not contain a polynucleotide that encodes an effector of MetAP2 activity.

31. The method of claim 30 wherein the polynucleotide is a human polynucleotide.